AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111
Serial Number: 10/674,960
Filing Date: September 30, 2003
Title: METHODS FOR LASER SCRIBING WAFERS
Assignee: Intel Corporation

Page 4
Dkt: 884.949US1 (INTEL)

IN THE CLAIMS

Please amend the claims as follows:

1. - 15.   (Canceled)

16.   (Original) A method for laser scribing a wafer comprising:

laser scribing a first continuous line;

laser scribing a second continuous line spaced apart from the first continuous line; and

laser scribing a third continuous line, the third continuous line positioned between the first continuous line and the second continuous line.

17.   (Original) The method for laser scribing a wafer of claim 16 wherein the first continuous line, the second continuous line and the third continuous line overlap.

18. (Original) The method for laser scribing a wafer of claim 16 wherein the third continuous line overlaps the second continuous line and the third continuous line.

19. (Original) The method for laser scribing a wafer of claim 16 wherein the first continuous line, the second continuous line and the third continuous line are formed from overlapping pulses from a laser.

20. (Original) The method for laser scribing a wafer of claim 16 wherein the first continuous line, the second continuous line and the third continuous line overlap are in an area having a width greater than the width of a saw blade.

21. (Original) The method for laser scribing a wafer of claim 16 wherein the first continuous line, the second continuous line and the third continuous line overlap are in an area having a width greater than the width of a kerf from a saw blade.

22. (Canceled)

23. (Original)   A method for singulating dies from a wafer comprising:

laser scribing a first continuous line;

laser scribing a second continuous line spaced apart from the first continuous line;

laser scribing a third continuous line, the third continuous line positioned between the first continuous line and the second continuous line; and

passing a saw through the area of the first continuous line, the second continues line and the third continuous line to cut the wafer.

24. (Original) The method for singulating dies from a wafer of claim 24 wherein the first continuous line, the second continuous line and the third continuous line overlap.

25. (Original) The method for singulating dies from a wafer of claim 24 wherein the third continuous line overlaps the second continuous line and the third continuous line.

26. (Original) The method for singulating dies from a wafer of claim 24 wherein the first continuous line, the second continuous line and the third continuous line are formed from overlapping pulses from a laser.

27. (Original) The method for singulating dies from a wafer of claim 24 wherein the first continuous line, the second continuous line and the third continuous line overlap are in an area having a width greater than the width of a kerf from a saw blade.

28. (Canceled)

29. (Original)   An apparatus comprising:

      a laser adapted to direct laser energy toward a wafer;

      a saw

      a microprocessor for controlling the direction of the laser energy and controlling the movement of the saw;

a memory operatively coupled to the microprocessor; said memory including an instruction set to cause a suitably programmed apparatus to

laser scribe a first continuous line on a wafer; and

laser scribe an area near the first continuous line but not contacting the first continuous line.

30. (Original) The apparatus of claim 29 wherein the laser scribe of the area near the first area includes laser scribing a second line near the first line and further comprising laser scribing a third line overlapping the first continuous line and the second line.

31. (Original) The apparatus of claim 29 wherein the laser scribe of the area near the first area includes producing a plurality of spaced laser ablations in the area adjacent the first continuous line.

32. (Previously Presented) A method for laser scribing a wafer comprising:

laser treating a first area of the wafer;

laser treating a second area adjacent the first area; and

laser scribing a third continuous line, the third continuous line positioned between the first area and the second area.

33. (Previously Presented) The method for laser scribing a wafer of claim 32 wherein at least a portion of the first area, a portion of the second area and a portion of the third continuous line overlap.

34. (Previously Presented) The method for laser scribing a wafer of claim 32 wherein the third continuous line overlaps the second area and the third area.

35. (Previously Presented) The method for laser scribing a wafer of claim 32 wherein the first area, the second area and the third continuous line are formed from overlapping pulses from a laser.

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111
Serial Number: 10/674,960
Filing Date: September 30, 2003
Title: METHODS FOR LASER SCRIBING WAFERS
Assignee: Intel Corporation

Page 7
Dkt: 884.949US1 (INTEL)

36. (Previously Presented) The method for laser scribing a wafer of claim 32 wherein the first area, the second area and the third continuous line overlap are in an area having a width greater than the width of a saw blade.

37. (Previously Presented) The method for laser scribing a wafer of claim 32 wherein the first area, the second area and the third continuous line overlap are in an area having a width greater than the width of a kerf from a saw blade.

38. (Previously Presented) The method for laser scribing a wafer of claim 32 wherein the first area, the second area and the third continuous line overlap are in an area having a width greater than the width of a kerf produced by a saw blade.